

THE BOOM

THE FULL AND COMPLETE DESCRIPTION.

Of The Mammoth Pumps Which Have Just Been Completed.

These Are The Largest Pumps Or Their Kind Ever Built.

For many months wagon load after wagon load of machinery has been passing through our streets on their way to the Grand Central mine, and from the passing glance it received one would not believe that it was an immense pump and would be the means of making Tombstone one of the finest and wealthiest camps in the universe. As many of our readers are not aware of the magnitude of these pumps, and few people abroad who may read this paper, we will give a full description of the pumps, the points of which were obtained from the chief engineer of the mine.

The main shaft has three compartments, the two northernmost being each five feet square and are used for the general operations of the mine, while the south compartment, five by seven feet, is devoted to the pumps. On the north side of the pump compartment is a cage substantially built of steel and used for what is termed pit work, that is, for lowering pumps, pump rods and such other appliances as such work entails.

This cage is connected to the pump hoisting engines by a steel wire cable $\frac{1}{2}$ inch thick, 5 inches wide, 1,500 feet in length and weighing 7,300 pounds. These pump hoisting engines are located in front and a few feet to the south of the regular ore hoisting engines and in the same building. They are supported by two parallel walls resting on a foundation of granite laid in cement. The cylinders are sixteen inches in diameter with a 24 inch stroke. The engine shaft is 10 inches in diameter, carrying a pinion 34 inches in diameter, faced with angle gear that engage similar gear on a spur wheel 14 feet in diameter, 16 inch face, and weighing 19,770 pounds. This spur wheel with a brake wheel 12 feet in diameter, and the cable reel, is carried on a shaft 14 inches in diameter. Everything pertaining to this engine is built in the most substantial workmanlike manner, and every appliance provided that would add to the security and accuracy of its manipulation, among which we may mention a new device for indicating the exact location of the cage, and brakes on both engines, and reel shafts of such colossal proportions and ease of operation that their effect is instantaneous.

But the crowning glory of the institution is the Mammoth pumping engine which is located in a wing on the south side of the main building and erected expressly for its accommodation. Two thousand tons of uncut stone form the foundation that support the two parallel walls of neatly finished dimension granite on which rests the splendid machinery.

The engine is compound jet condensing over head beam pattern, with fly attachment, O'Neil valve motion, and Dickey's automatic unhooking apparatus, the whole designed and built by the Union Iron works of San Francisco, expressly for the Grand Central mining company. The base of hollow and iron is in four pieces. The two at the front and sides forward of the engine and on which rest the frames, weighing each 14,700 pounds, and the third piece which forms this base and supports the cylinders, weighing 16,900 pounds. The fourth piece, weighing 11,800 pounds, ex-

tends still backward from the third piece and at right angles thereto, and supports the pillow block bearing the journal in which revolves the west end of the shaft that supports the fly wheel disc crank and eccentrics. The Samson or A frame, as it is termed, is of hollow cast iron in five pieces, and extends to a height of 21 feet from the base. The two front pieces weigh each 14,300, while the two nearest the cylinders weigh each 16,900 pounds, while the center or distance piece connecting the two side frames weighs 11,500 pounds. Viewed from the side, the Samson frame resembles a letter A, the forward posts inclining sufficiently to carry brackets which form stairways, by which the working beam journals are reached from the engine floor.

There are three hollow columns connecting the lower and upper steam chests, each weighing 5,400 pounds, the chest themselves having an average weight of 4,550. Extension of the columns is provided for by phosphor bronze connections between the tops of the columns and the under side of the upper steam chest. The attaching and detaching of the eccentric rods and the rock shaft arm is accomplished by the use of devices in charge of the engineer and also automatically if unusual speed is attained by an ingenious arrangement of the draughtsman of the Union works. It consists of a small vertical brass pump aspirated by a rod attached to the main beam, and which forces water into an accumulator which has a discharge valve the office of which is regulated at will.

This accumulator has a plunger bearing a 600 pound weight and beneath which a pressure is maintained by the operation of pump, adequate to retain it elevated at a certain point. An undesired increase of speed of the engine would cause a junction of water greater than the unaltered speed of the discharge valve would allow to escape, and as a consequence the plunger would be forced upward, the driving eccentric thus unhooked, which depriving the engine of steam, would bring matters to a standstill in a few seconds.

The high pressure cylinder of this engine weighs 7,500 pounds, while the low pressure cylinder weighs 15,400. Each cylinder supports a distance or bracket piece weighing 4,700 pounds, which, reaching upward, sustains a narrow iron gallery that extends along both sides of the working beam and gives access to the uppermost part of the machine. The working beam is of rolled steel, nearly elliptical in shape, 24 feet in length over all and 7 feet deep in the center, weighing as stated 50,100. So massive are its proportions and so imposing its construction that it at once attracts the eye of the observer, though a full appreciation of its magnitude and detail is not obtained by seeing it as it now appears gracefully perched on the Samson frame 24 feet above. The forward end of the working beam extends over the pump compartment of the shaft and to this end will be attached the ponderous steel rods that will operate the pumps below. To the back end of the working beam is attached the connecting rod 19 $\frac{1}{2}$ inches in diameter and 24 feet in length, weighing 5,700 pounds, which gives motion to the fly wheel shaft. The disc crank on the shaft to which the connecting rod attaches has a 9 inch face, is eleven feet in diameter and with the 16 inch shaft that carries it weighs 35,400 pounds. The fly wheel has a 12 inch face is 25 feet in diameter, made in ten sections, each weighing 5,100 pounds and with its own and other attachments weighs in its entirety thirty six tons.

Beneath the engine floor, between the Samson frames and forward of the cylinders, is located the condenser which is 36 inches in diameter, three foot stroke, and weighs 16,000 pounds. It is a condenser and air pump combined; its travel is vertical and motion is applied by wire connecting rods attached to the main beam above.

Steam for all the machinery in these buildings is generated in six steel tubular boilers each 45 inches in diameter and 15 feet long, set in brickwork, and the furnaces scaped for the consumption of coal, now the fuel used exclusively at these works.

The pumps from which so much is expected, are of the Cornish pattern, and are such as are used in all the great mines of the world. They are 14 inches in diameter, 8 foot stroke and each weighs 22,000 pounds. They are set in pairs on the 200, 400 and 600 levels and every 200 feet thereafter will be similarly provided for.

The sinking pumps which will rest on the bottom of the shaft will have perforated will have a perforated spear piece or wind bore or its extremity weighing 7,000 pounds. Immediately above this spear piece or sinking point comes a clack chamber weighing 5,000 pounds.

Next above comes the working barrel which is in two sections, each 10 feet six inches long, the combined weight of which is 14,600 pounds, their diameter is 20 inches and they are lined with brass $\frac{3}{4}$ of an inch thick. The bucket which travels in this barrel will be connected to the main pump rods by four inch round rolled steel pump rods furnished in 20 foot lengths, each weighing 1,000 pounds and keyed together through male and female couplings in the usual manner. Continuing upward we next encounter the changing chamber weighing 5,280 pounds, provided with a readily removable gate through which the sinking pump buckets are changed, thus obviating the difficulty usually experienced in such operations.

The pipe which will convey the water from the sinking pump to the tanks on the 300 level is 24 inches in diameter in 23 foot lengths and weighs 100 pounds to the foot, 200 feet of this pipe is provided.

From the 300 level to the surface the pump columns will be in 25 foot lengths, 14 inches in diameter built of $\frac{3}{4}$ inch plate iron joints strap and flange and each length of pipe weighing 1300 pounds.

The pumps on the 600 level will lift the water from the tanks on that level to tanks of equal capacity on the 450 level. The pumps there located will advance it 200 feet more in a similar manner, while the machinery on the 200 level will raise it to the surface, whence it will be removed through a flume that will lead to the gulch on the northwest side of Contention Hill, and from there it will find its way to the San Pedro river through the natural water course.

Among the memorable event of the county was the laying of the corner stone of the County Court house as written up by Samuel Purdy, then proprietor of the Tombstone Epitaph. If now we give a portion of the remarks which contains the names of many of the citizens:

The palladium of the liberties of Cochise county was substantially sacred yesterday. The corner stone of the new court house was laid and the temple of eternal justice substantially established. The ceremony of yesterday afternoon was something that every citizen of this vast and powerful Republic should take a deep interest in. That portion of the citizens of the United States who reside within the political division known as Cochise county, Arizona, should be especially interested. A court house is a symbol of the weak with the strong. It is an eternal monument to the absolute justice that prevails wherever the standard of the United States of America holds sway. Jurors have been corrupted, public prosecutors bribed, judges even reduced, but under it all the principle of equal and exact justice prevails. A court house is an everlasting monument to the grandeur of free institutions. It points out and continually reminds the observer that men are capable of governing themselves. While legislative halls are symbolical of the sovereignty of a people, a court house is a monument to their calm prudence and sound sense.

The ceremonies attended on laying the corner stone of our county's temple of Justice, were yesterday duly solemnized. Music, oratory and prayer were predominant, and the deep interest taken by our citizens was attested by the large attendance. Lowering clouds were ominous of a storm, and there was plentiful scarcity of the fair sex though politicians were still a familiar object. The proceedings commenced about five o'clock, and a large crowd of people were then in attendance, among those were several old timers who had watched the growth and prosperity of the city from the days of its inception until one was struck in the 600 foot level. Among the old timers visible at the scene of the ceremony we may mention C. Calhoun, who first started a saloon in what is now Tombstone. Mr. Calhoun was the original locator of the Mountain Maid and that part of Allen and Fourth street that lay in the immediate vicinity. Mr. Calhoun also erected the first building. It was set up on the site of the old Grand Hotel and certain poles. Chas. Brown, proprietor of the lot on the corner of Allen and 4th streets, was conspicuous by his absence, but as he is expected back here in a few days it may not be amiss to state that he built and owned the first hash house in Tombstone, for which many a weary tramp may thank the Lord. Gen. J. B. Allen, whom irreverent old timers nicknamed "Pie," also created a stir among the benches by his absence. For the benefit of tenderfeet we must state that "Pie's" store stood on the site of the present stately edifice occupied by P. W. Smith & Co. Corriggan, the inventor of the present popular Alhambra saloon, was now visible. Ben Cook, who, with J. Vizina were among the earliest locators of the present town, shed the beams of their smiling countenance over the proceedings. Cook and Vizina were the original owners of the lot occupied at present by the City Hall and Hawkins & Burman. Old Judge Tom Wallace, who has sampled whiskey in every prosperous mining camp on the Pacific coast, lent the charm of his presence to the public celebration. Captain Blair, whose soldierly presence has made a mark on more than one continent, was also an observant spectator. M. P. Shaffer, one of the oldest, most public-spirited and enterprising citizens of Tombstone, was also an eager spectator. There were several other prominent citizens present, among them being Rt. Rev. Dr. Salpointe, Bishop of Arizona, Rev. P. J. Gallagher, pastor of the Catholic church; Parson McFigue, of the Methodist church; Under Sheriff Woods, District Attorney Price, Samuel Purdy, M. E. Joyce, J. O. Dunbar and many others.

NOTES.

During the delivery of the oration, Mr. Joyce was heard to remark to Col. Stanford:

"Brevity is the soul of wit, and 'twill rain like hell in a few minutes."

It was conceded that Lytleton Price was the handsomest man on the stage.

It was noticed that Harry Woods smoked a brand new merbaum pipe.

The Republican rode on a saw-backed horse, the Independent mounted its shanks and the Tombstoner drove in a carriage.

Joyce wore a continuous smile from his right big toe to the little bald spot on the crown of his head.

Dave Neagle's "terrors" were in force as usual.

The ladies remarked that Alderman Nash must have been a pretty man when he was young.

Thornton tried to look patriarchal by exposing the white hairs in his beard and looking wise.

Everybody was too utterly too too when running from the rain.

NOW AND THEN

THE PROGRESS OF MINING IN TOMESTONE.

The Failure of Hudson & Co's Bank—The Miners Strike Etc., Etc.

The Bright And Flattering Prospects of Tombstone's Future.

For the past year Tombstone has not been a desirable place for a man to come who was desirous of obtaining work in the mines for the mines have with but few exceptions been lying idle. Business men did not care to open up houses here for owing to the mines being idle, there were none to buy their goods. The cause of the depression was for two reasons. First, one year ago last April, the mine owners notified the men in their employ that in the future they would not pay but three dollars per day for miners and stated facts, which has since turned out to be true that owing to the water coming into the mines so fast, they would have to shut down, as they could not run the mines any longer until they had put in pumps and that it would cost about one half million dollars to place the pumps in position. This proposition was not acceded to by the miners the majority of whom were good and fair men, but as in most all cases of this kind, they associated themselves together into a Miners Union, which was controlled by grey leaders, who disgraced the miners and themselves and caused a complete cessation of work in the camp. Times then began to look very blue, and business men and in fact all of our citizens saw the great mistake that had been made, for many of them as did the writer of this article sympathize with the miners as against the mine owners, but alas they all soon found out their mistake. Following upon the heels of this came the failure of Hudson & Co's bank, which absorbed all the earnings for years of many of the miners and also the ready money, and the saving of our merchants. This almost caused a riot in our fair city, and had not the managers of the bank like the Arab folded their tent and silently stole away. A few months after this the Head Center mine under the superintendency of Chris Bateman, advertised for 100 men to go to work, and had no trouble whatever in getting the required number, but then trouble began to brew again for the president of the Miners Union announced in a public speech that he could not control the union any longer and that they intended to burn the hoisting works to the ground. This incendiary language caused the mine owners to put guards over their hoisting works. This caused a number of hot-heads to resolve to storm the mine, and accordingly a large party of men marched upon the Grand Central mine, and hid behind cactus and opened fire upon the works, but were stood off by the guard. A few nights after this the residence of Charles Leach the foreman of the Grand Central mine was burned to the

ground, undoubtedly by incendiaries. A few months after this the Grand Central company put a force of men to work and the Toughnut company did the same they both employing altogether about three hundred men. Shortly after this the Grand Central mine contracted for the Mammoth pumps which have just been put in the place, and the camp has been at a standstill ever since everyone waiting for a day of jubilee, which would surely come when the pumps were put in place and be water drained out of the various mines. This day has now arrived, and today the powerful pumps of both the Grand Central and Contention mines commenced pumping out volumes of water, and a contented and happy smile to be seen on the faces of all our citizens, for they know that in a few weeks that the water will be drained out of the mines and work be resumed all along the line, and that inside of three months hundreds of men will be working in the various mines, and our streets will be lined with visitors and capitalists seeking investments.

We now predict that inside of two years our city will contain a population of 10,000 people, and the noble band of business men who have staid with it in adversity will reap a harvest in its prosperity. That the owners of these mines have faith in finding large bodies of ore below the water level is demonstrated in the fact that they have gone to the expense of over half a million of dollars in putting in these pumps, and no assessment has been levied either, the money being taken out of the company treasury showing the people of the whole world that they had full faith in the mines, notwithstanding the croakers who said that the bottom had fell out of Tombstone and that it would never be any account again. This has proved to be false for even now our streets are filled with strangers the connoisseurs of the past who have stared the passer by in the face for so long are almost a thing of the past, and it is now quite a job to find a house suitable for a family, so great has been the demand during the past month. Business has been picking up and new firms have engaged in business, occupying stores down as far as Third street on Allen street something that was not done before even in the palmiest days of Tombstone. There is but one store that we know of to let on Allen, street and out two on Fremont. It will be seen by this that the boom has already commenced and that we have passed through all of our dull times and prosperity has now settled down on Tombstone and is forcing her people into the ranks of the wealthy. A glance through our columns will convince the people of other cities that our people are live and energetic, and that in connection with the mines they will build up one of the largest mining camps on the Pacific coast, and that ere long our streets will be lighted by electric lights, and street cars will run through our streets and upon Contention hill.

Arizona Census.

The following is the official count of the population of Arizona in 1882 as certified to by the secretary of the territory: Apache, 6,816; Cochise, 9,640; Gila, 1,582; Graham, 4,229; Maricopa, 6,408; Mohave, 1,910; Pinal, 3,363; Pima, 17,439; Yuma, 3,923; Yavapai, 27,680. Total, 82,976.

To the above can be added ten per cent and to Cochise twenty per cent.

Stock Meeting.

The regular quarterly meeting of the Cochise County Stock Growers' association was held Saturday afternoon at the rooms of the board of supervisors and a goodly number of the members were present.

There were two or three initiations and the secretary was informed that there would be several more at the next regular meeting.

The association is in good condition but lacks vim. Each member should put his shoulder to the wheel and see that every cattleman in the county joins. The association has accomplished a great deal of good since its organization for all stockmen.

THE TOMESTONE will lend all the assistance possible in helping the association.

Mr. T. J. Dowell has reduced the terms of tuition to \$5 per month for either Spanish or bookkeeping to those attending at his of-